

(shown partially broken away in FIGS. 5A-5C) are mounted directly on the upper surface of platform 50, rather than being elevated above the upper surface. Again, no sloped recess is included, with the upper surface of platform 50 being generally planar. However, two lifts 52a and 52b are secured to the bottom of the waterward end of each side rail member 25 of intermediate ramp 10. Each lift 52 may comprise a transverse rod or other structure having a rounded bottom surface. When the side rail members 25 are constructed of steel, as is common practice, the lifts 52 are preferably welded to the bottom surface of the side rail members 25. The lifts 52 are dimensioned such that they are received within the corresponding guide channels 27.

As shown in FIG. 5B, when the platform 50 is at its lowest elevation, both lifts 52a and 52b on each side rail member 25 contact and slide within the corresponding guide channel 27. When platform 50 floats to near its highest position (FIG. 5C), only the landward lift 52a contacts the bottom of corresponding guide channel 27. In this position, the intermediate ramp 10 pivots and slides on the landward lift 52a. The height of the lifts 52a are determined to ensure that the platform 10 is raised above the landward edge 54 of the platform 50 when intermediate ramp 10 is in an approximately horizontal position at the highest elevation of the buoyant platform 50. Although first and second lifts 52a and 52b have been illustrated and described, it should be apparent to those of skill in the art that a single lift or protuberance could be formed on the bottom of the waterward end of each side rail member 25, with the intermediate ramp 10 being supported by and pivoting on the lift at various elevations.

While preferred embodiments of the invention have been illustrated and described, it will be appreciated that various changes can be made therein without departing from the spirit and scope of the invention. For example, as mentioned earlier, the configuration of the system can be changed to include turns to fit with the configuration of a particular harbor. Further, additional ramp-platform units could be interconnected between the shore and the dock ramp, providing for gentler slopes or perhaps accommodating a larger tidal range. It should also be appreciated that the shore-to-dock access system of the present invention can be used in most any situation requiring access to variable-level bodies of water (e.g., lakes, reservoirs, rivers, and oceans). Finally, it should be clear that the shore-to-dock access system of the present invention can connect any fixed level object, designated as "shore" herein, with a "dock" below. Consequently, the invention can be practiced otherwise than as specifically described herein.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An intermediate platform system for use in a shore-to-dock access system, including a floating dock and an associated dock ramp, the intermediate platform system comprising:

- (a) a buoyant platform having an upper surface, a landward side and a waterward side, said waterward side being pivotally connected to the dock ramp;
- (b) an intermediate ramp having a landward end and a waterward end and extending from a structure having a fixed height to said buoyant platform, said waterward end being unconnected to and slidably

supported by a supporting surface of said landward side of said buoyant platform and said landward end being pivotally connected to said structure having a fixed height; and

- (c) a piling system slidably connected to said buoyant platform for supporting said buoyant platform at a predetermined height while allowing said buoyant platform to float freely above said predetermined height; whereby the maximum slope of said intermediate ramp is fixed by said piling system and said structure.
2. The intermediate platform system of claim 1, wherein the piling system comprises:
- a plurality of pilings; and
 - a plurality of support structures fixed to said pilings, such that said buoyant platform is supported by said support structures at said predetermined height.
3. The intermediate platform system of claim 1, wherein said buoyant platform supports both the dock ramp and said intermediate ramp coupled to said buoyant platform while maintaining an approximately level orientation at all times.
4. The intermediate platform system of claim 1, further comprising means for maintaining said waterward end of said intermediate ramp at an elevation above said supporting surface of said buoyant platform on which said waterward end of said intermediate ramp slides as the buoyant platform floats between said predetermined height and a highest position.
5. The intermediate platform system of claim 4, wherein said means for maintaining said waterward end of said intermediate ramp comprises a section of said upper surface of said buoyant platform that defines a recess in proximity to said buoyant platform's landward side, wherein said recess receives said waterward end of said intermediate ramp when said buoyant platform floats to a predetermined minimum slope.
6. The intermediate platform system of claim 4, wherein said means for maintaining said waterward end of said intermediate ramp comprises a spacer member supporting said waterward end of said intermediate ramp above an upper surface of said buoyant platform.
7. The intermediate platform system of claim 1, wherein said piling system is configured relative to the structure so as to maintain the slope of said intermediate ramp at no greater than about 4.8 degrees from horizontal.
8. A dock-access system for use on a variable level body of water for access between a fixed height structure and a dock and dock ramp structure, the dock-access system including at least one ramp-platform unit interconnecting the shore with the dock ramp, wherein the ramp-platform unit comprises:
- (a) a first buoyant platform having an upper surface, a waterward side pivotally connected to the dock ramp, and a landward side;
 - (b) a first intermediate ramp having a waterward end and a landward end and extending from the fixed height structure to said buoyant platform, wherein said waterward end is unconnected to and slidably supported by a supporting surface of said landward side of said buoyant platform and said landward end is pivotally connected to the fixed height structure;
 - (c) a plurality of first piling slidably connected to said first buoyant platform, wherein said first pilings substantially restrict the horizontal movement of